

## PRODUCTION OF SPINEL

Patent Number: JP2000086234  
Publication date: 2000-03-28  
Inventor(s): HIBINO TOSHIYUKI; TSUNASHIMA GUN  
Applicant(s):: AGENCY OF IND SCIENCE & TECHNOL  
Requested Patent:  JP2000086234 (JP00086234)  
Application Number: JP19980262868 19980917  
Priority Number(s):  
IPC Classification: C01F7/00  
EC Classification:  
Equivalents: JP2981553B2

---

### Abstract

---

**PROBLEM TO BE SOLVED:** To provide a method for producing a spinel at a lower temperature than that used at the time of producing the spinel with a conventional technique comprising solid phase reaction of Al<sub>2</sub>O<sub>3</sub> with MgO or thermal decomposition of a coprecipitate and also to provide a precursor for the spinel production.

**SOLUTION:** This production comprises: subjecting a precursor for the spinel production, that consists of a hydrotalcite-like compound, to thermal decomposition at 350 to 500 deg.C to convert the precursor into an oxide, wherein the precursor is represented by the formula Mg<sub>1-x</sub>Al<sub>x</sub>(OH)<sub>z</sub>A<sub>a</sub>.bH<sub>2</sub>O A is an inorganic anion releasable from the compound at the time of calcining it at 350 to 500 deg.C; (x) is a numerical value of 1/5 to 1/3; (a) is a numerical value that meets the formula a=x/n ((n) is a valence of the anion A); and (b) is an indefinite number); thereafter, immersing the resulting oxide in water or an aq. solution contg. inorganic anions equivalent to the inorganic anions A in the above formula to regenerate a compound having the hydrotalcite-like compound structure from the oxide; again calcining the regenerated compound at 350 to 500 deg.C, or when no spinel is formed at this point of time, further repeating the regeneration of a hydrotalcite-like compound and the calcination of the regenerated hydrotalcite-like compound at 350 to 500 deg.C until the objective spinel is formed; and thereafter, eluting and removing byproduct magnesium oxide from the regeneration/ calcination product with an acidic aq. solution.

---

Data supplied from the esp@cenet database - I2